

* For Examiners Reference

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1 – 6: Cancelled

7. (New) An apparatus for heating and melting solid lubricants in a delivery drum (4), comprising:

a heating element (1) composed of armored resistors shaped as concentric rings and junction spokes ;

a hoist (2) adapted to lower and raise said heating element (1) into and out of said drum (4);

vertical rods (6) that connect said heating element (1) to components of said hoist (2), wherein said vertical rods (6) are adapted to be unheated;

a first thermal sensor (5) operatively connected with said heating element (1);

a second thermal sensor (7) mounted on said vertical rods (6);

a transfer pump (8) for withdrawing melted lubricant from said drum (4) via a suction tube (11);

a bottom valve (9) mounted at a foot of said suction tube (11); and

a lubricant delivery tube (10) connected to an output side of said pump (8).

8. (New) An apparatus according to claim 7, wherein said heating element (1) is subjected to thrust derived from its own weight and the weight of movable masses of said vertical rods (6), components of said hoist (2), said transfer pump (8), and said suction tube (11).

9. (New) An apparatus according to claim 7, wherein said delivery tube (10) is coaxially disposed in a jacket, and wherein a diathermic fluid is adapted to circulate within said

jacket for heating said delivery tube (10).

10. (New) A method of operating the apparatus of claim 7, including the step of controlling the temperature of said heating element (1) by means of said first and second thermal sensors (5, 7) at a melting temperature (T1) and a maintenance temperature (T2) respectively, wherein said temperatures are predetermined for melting said lubricants but are such as to prevent harmful overheating thereof.

11. (New) A method according to claim 10, wherein after said heating element (1) has reached a bottom dead center of said drum (4) upon at least substantial melting of the entire mass of said lubricant, said first thermal sensor (5) keeps said heating element (1) at said melting temperature (T1) until the entire mass of said lubricant is melted.

12. (New) A method according to claim 11, wherein said second thermal sensor (7) is mounted on said vertical rods (6) at approximately one third of their height as measured from a bottom thereof, and wherein after the entire mass of said lubricant has been melted, said second sensor (7) keeps said heating element (1) at said maintenance temperature (T2).